QRZ NEWS

A MONTHLY PUBLICATION OF
SOUTHERN PENNSYLVANIA AMATEUR RADIO CLUB, INC
PO BOX 1033 - LANCASTER, PA 17608-1033
(Founded June 1960)
AN AFFILIATED SPECIAL SERVICE CLUB OF THE ARRL, INC.
"Public Service through Communication"
Website: WWW. K3IR.org
Email address: k3ir@arrl.net
Repeaters: 145.230 - 449.975 - Packet 145.030 - ATV 923.250, FN10se
Club site 1715 Breneman Road, Rapho Twp. (Manheim P.O. 17545 no delivery)

October 2013

President's Message

Outer Banks Adventure

Columbus Day, the real one, October 12, is my wife's birthday. Now I'm not going to say which birthday but let's just say she spent some time with the Social Security Commission in the past few weeks. Anyway, Years ago we would visit the Outer Banks of North Carolina on vacations. Two things cut down on the frequency of those trips. The discovery of cruising and a daughter who bought a house five states away.

Well, Pat decided that she wanted to do one more trip to North Carolina. We decided on the week of October 6 through 12. So early Sunday morning we load our bags into the F-150, and that will become an important decision later, and start the 400 mile drive. Six and one half hours later we were checking into the Outer Banks Motor Lodge, on the beach in Kill Devil Hills.

So anyway, you folks weren't the only ones getting rain last week. Monday was very nice and we enjoyed several long walks on the beach and spent a lot of time watching the ocean and the fishermen. There was a fishing tournament later in the week but a number of people came early just to fish for fun. I didn't see a lot of fish being pulled in, but then I didn't see a lot of hooks being baited. I really think a lot of these guys went out early in the morning and would go back to their spouses 6 hours and a case of beer later. "Yes dear, the fish just weren't biting today."

Tuesday brought heavy rain and strong winds. We really expected to see Jim Cantore but we only rated Alex Wallace. By Wednesday the rain had stopped but the winds were still pretty strong. My wife loves to walk along the beach but does not like wind and rain. After lunch on Wednesday I talked her into at least walking down to the water's edge. Once we got on the beach we decided to walk a short distance down the shore. We didn't want to go too far because it was high tide and the winds had pushed the surf way higher. We were a little

Table of Contents

President's Message	Page 1
September Meeting Minutes	Page 3
Coming Events	Page 4
Editor's Notes	Page 4
Six Meter DX Report	Page 5
ARRL Online Comm Courses	Page 8
ARES/RACES Information	Page 10
SPARC Officers, Nets, Etc.	Page 10
W3ZKU on 1296	Page 12
Six Meter EME Report from W7GJ	Page 12
AA-600 Antenna Analyzer	Page 12
Near Vertical Incidence Skywave	Page 13
Errata: Sep 6m DX charts Corrected	Page 17

concerned that we might get trapped between the waves and the dunes so we just made short trips from the motel first one way then in the opposite direction. After awhile Pat said, “You know, this is fun in a perverse kind of way.”

Thursday we decided to head down the coast to Hatteras and take the ferry to Ocracoke. The first thing we ran into was front end loaders clearing the sand from the road. Now you have to remember that Hatteras is a narrow strip of land with the ocean on one side and the bay on the other and sometimes they get REALLY close together so we were a little surprised to see how much this narrow strip of land had been developed since the last time we were there. What had once been little villages with a few houses and a fire department is now a bustling community of beach houses and condominiums. Remember, there is water all around! We reached the town of Avon only to find the highway flooded. We had the truck which sits pretty high and I could see the road through the water, and lots of cars were making it through so we pushed on. After about a mile we cleared the flooded road but the weather was starting to look ominous so we scrapped our plans for the ferry ride and returned via the same route.

Thursday brought a return to nicer conditions. Lots of time for walking on the beach and watching the surf. Friday dawned cloudy and misty. After breakfast we were sitting on the porch watching the waves when my wife says “What do you think about driving home today instead of waiting till tomorrow.” Just think about this, Friday of a holiday weekend, through Norfolk, around Richmond and Washington DC. Throw rain into the mix also. Didn't seem like a good idea to me but....

Shortly after lunch we departed Kill Devil Hill for what will probably be the last time. We really love it there but the huge growth of the area and the increase in traffic mean it's just not what it used to be. Also we have many other places we would like to visit. Anyway, my prediction about traffic on the trip home was somewhat inaccurate. The traffic wasn't bad, it was terrible! Two accidents in the Norfolk/Hampton Roads area had both I 64 and I 664 at a standstill. Once we cleared that it was a slow go all the way to Richmond on 64, heavy on 95 to DC, slow and rainy on 495 and even heavy on I 270 to Frederick, MD. Things didn't really thin out until we were nearly to Gettysburg.

So, by 8:30 we were home again. As a kind of reward for enduring the day’s trials I was now free to visit the SPARC site for the PA QSO party on Saturday and Sunday. I will try to get a full report on that event together for next month.

Someone asked if I was taking a radio and antenna along. You know I didn't even take an HT with me. I did have the VHF/UHF mobile in the truck but I never even turned that on. There are two reasons. One we were staying in a motel not a house. I don't think a vertical in the dunes or a wire running from the common porch would have been appreciated. Two, it was only my wife and I. We had talked about the things we wanted to do while we were there and places we wanted to revisit. If other extended family members had gone Pat probably would have done things with them, which would have given me time on my own. This trip was a birthday present to her and I didn't think it was appropriate to spend hours on the radio while she sat alone.

Remember, Ham radio can be an important service and is a lot of fun but family is more important. And besides, who knows, giving your spouse undivided attention for a few days may buy you a free pass to a Ham related activity later.

73, Harry WA3FFK

MINUTES OF THE SEPTEMBER 2013 MEETING OF THE SOUTHERN PENNSYLVANIA AMATEUR RADIO CLUB (SPARC)

Held Tuesday September 24, 2013 at the repeater site on Breneman Road

The following members and guests were present:

Dave Sarraf, N3NDJ
Jim Silvius, KW3E
David St. Pierre, KC3AUQ
Jaclyn St. Pierre, KC3BDE
Gerry Wagner, KB3SSZ
Gerald Wilson, KB3GNB
George Kraus, W2LEI
Ted Freedman, K3KSA
Larry W. Laughman, K3LWL
Ken Barto
Dave Payne, N3LOM
George Gadbois, W3FEY
Tom Hartranft, KB3ZGF
Kevin Lampo, K3LLC
Mike Warner, N3XPD
Charles Zimmerman, N3WXO
Harry Bauder, WA3FFK
Jim Hartranft, KB3ZGE
Linda Hartrantf, KB3ZGE
Scott Lithgow, KN3A
Eugene Hostetter, KB3ZGG
Mike Daskalopoulos, KJ6MIC

Harry started the meeting at 7:00 PM.

Dave presented the minutes from the prior membership meeting. On a motion by Gerry Wagner and a second by George Gadbois they were accepted as presented. Harry presented the Treasurer's report for Mike. On a motion by Dave Payne and a second by Kevin Lampo it was accepted as read.

General Topics and Announcements

- Jim Hartranft is starting a series of Technician classes at Moravian in October.
- Harry is holding General classes at the repeater site in Thursday.
- New operating benches and other improvements are underway in the operating building.
- SPARC would like to change to a one fee per family policy. No changes are needed to the bylaws. Membership applications are still needed from each family member.
- A trip to the ARRL 100th anniversary convention is being considered. The convention is July 17-19, which is Thursday through Saturday. Transportation cost $130 by train and $40 by car pool. A charter bus was mentioned as a possible option. Fees, meals, and rooms are the responsibility of the attendee. SPARC is not planning to offer any sort of package.

New Business

- Northwest EMS, Inc has offered us a portable inflatable hospital. We would have the use of it if we agreed to deploy it as needed. It needs an enclosed trailer and a generator.
- Planning continues for a remotely-operated HF rig. Used rigs are too costly. A new rig is on the order of $1000. HRO has a suitable model on sale through the end of the month. Harry asked the membership for approval to purchase a rig. No objections were raised.
- Mike Hess wants to purchase a surplus Cushcraft R7 antenna for $100. No objections were raised to the sale and no counter-offers were made. SPARC has a surplus repeater controller for sale as well.

- Harry gave a summary of tower work done to date. He would like to purchase an additional ascender cable and cable grab and some rescue equipment, most likely this spring.

- The linking system Ethernet cables are degrading due to defective non-UV resistant jacketing. The manufacturer has agreed to replace the cable. Dave needs to coordinate a tower climb with Gary Blacksmith, who will furnish the replacement cable.

- A new member application has been received from KA3DPW. It was accepted with no objections.

The business part of the meeting adjourned at about 7:30. The technical portion of the meeting was a talk by Scott Lithgow on Geocaching with a demonstration that involved finding and marking the cache at the repeater site.

Respectfully submitted,
Dave Sarraf, N3NDJ
SPARC Secretary

Coming Events

SPARC programs for 2013

Tuesday 22 October 2013 7:00PM at the Rapho Twp. Municipal building, 971 N. Colebrook Rd, Rapho Twp.

The program for the evening will be a talk by Harry Bauder, WA3FFK, on the construction of simple HF antennas.

Monthly Breakfast

The second Saturday at 0800 of every month is a SPARC breakfast at Gus's Keystone Restaurant, 1050 W. Main St, Mt Joy, PA. Contact Gerry Wagner, KB3SSZ, for more details. Everyone interested in Amateur Radio is invited to attend. See http://guskeystone.com/ for restaurant details.

Columbia Halloween Parade

Thursday, 24 October 2013 will be the Columbia Halloween Parade. This is a fun annual event and a public service. Most of the Amateur activity is directed toward assisting in organizing the various participating groups. After the parade starts, we monitor for exceptions and assist as needed. Someone usually marches the route with the parade to observe progress.

Meet at Susquehanna Fire Co. 10th & Manor Sts., Columbia, PA at 5:30PM. Parking and rest facilities are available at the fire house. The parade starts at 7:00PM.

Volunteer Amateurs need not be members of SPARC. You will be provided with a listing of the parade organization so you will be able to answer questions on where the various groups should muster for the parade. Bring a flashlight. It gets dark early.

The Kilty Band is great! The steam calliope marks the end of the parade.

This is an HT only event using a primary simplex frequency of 147.470MHz. Contact Dave Payne, N3LOM for further information.

Other Events

Editor's Notes

SPARC is making great progress on upgrading the club site now that we have the mortgage and buried oil tank behind us. Club membership is growing steadily and meeting

attendance is growing. The monthly breakfasts get people out and participating. A remote station accessible over the Internet is in the works. Keep spreading the word to your friends and SPARC will continue to grow.

NASA is reporting that solar cycle 24 is the weakest cycle in the past 100 years. Sky & Telescope magazine has published a report in their November 2013 issue summarizing the information. See http://www.skyandtelescope.com/community/skyblog/newsblog/The-Weakest-Solar-Cycle-in-100-Years-216752671.html for details.

The period between about 1650 and 1715 was a period when almost no sunspots were reported. The Earth cooled enough that it is called a Little Ice Age.
No organized sunspot records were kept at that time. Various astronomers recorded their observations and historians later collected the records.

Today we have the STEREO space probes that watch the entire surface of the Sun, front and back. See "Where is STEREO", page 10, QRZ News May 2012 for more information.

Incidentally, the STEREO probes will be observing comet ISON when it makes its' closest approach to the Sun on 28 November 2013, Thanksgiving Day. See http://stereo-ssc.nascom.nasa.gov/comet_ison/.

73, George, W3FEY

Six Meter DX Report

By Chris Patterson, W3CMP

Here is something a bit different-it's a write up of new equipment for six I put in my latest "What's On Six" column. Although the Gemini amp isn't FCC approved yet, I think it wouldn't be too hard to get one over here. It looks as though it can give a nice boost the average home station. The only reservation, if any, is that output power of most transceivers must be reduced to use the amp (watch the ALC overshoot transmit power spikes), and that the input power must be specified at the time of purchase (I suspect a fixed attenuator is installed at the factory).

The Tokyo Hy-power HT-750 is a real neat rig that can be purchased by contacting Tokyo Hy-Power directly at: info@thp.co.jp.

The 6N4 is an enigma. I have not been able to get any more information about it. If 4 metres ever becomes available here in the US there will be a mad dash for equipment for the new band; maybe the manufacturer of the NR-6N4 knows something.

Linear Amp Gemini 300W Solid State Linear Amplifiers

Linear Amp UK has announced the Gemini series of solid state 300 watt linear amplifiers with integral linear power supplies. The new amplifiers are designed, manufactured and assembled in the UK, and are available in six, four, and two metre versions.

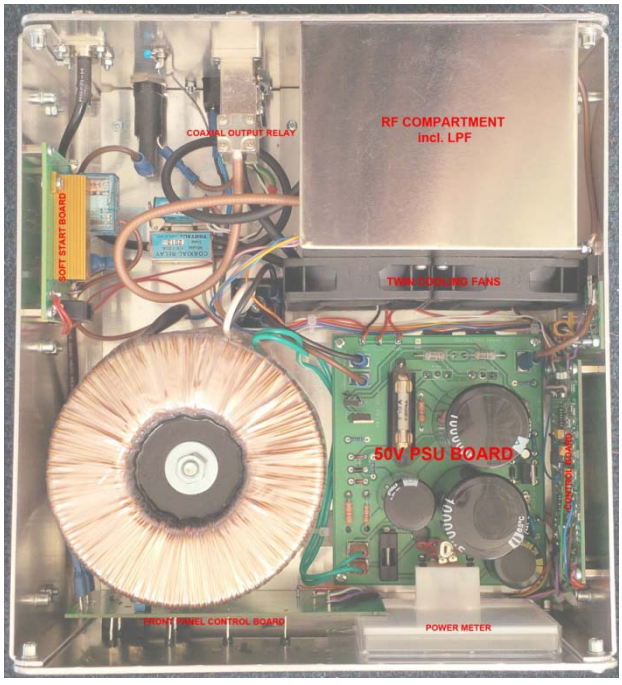
According to Linear Amp, these amplifiers are designed to fill a market gap between the low power outputs of transverters and smaller rigs and the one kW-plus amplifiers that not all users want or can afford. The Gemini range of amplifiers has drive requirements of 3-25 watts. The exact input power is user specified at time of purchase. The units feature instant-on solid state performance in a compact, attractive aluminum package. Dimensions are 270mm (10.6") w x 300mm (11.8") d x 120mm (4.7") h.

The RF section has been designed exclusively for them by Chris Bartram GW4DGU, of Mutek fame, and use the Freescale MRFE6VP6300HR3 LDMOS device for high performance and maximum ruggedness. The amplifiers are designed to

meet the requirements of ETSI EN 301 7831 v1.2.1 with regard to conducted spurious emissions. They have built in protection for overdrive, high SWR and over temperature to ensure reliable performance. Although not mentioned in the information provided, it appears that PTT is accomplished by ground on transmit.

Specifications for the Six Metre Unit:

Frequency Coverage	50-54MHz
Power Output @ 1db compression	300 watts
Power Output @ -30db IMD	>250 watts
Spurious Output	<-70db@300 watts
Input Power (specified when ordered)	3-25W
Efficiency (RF)	>65%
RF Device	1 x Freescale MRFE6VP6300H
Protection	Overdrive, SWR, Over Temperature
Relays	Coaxial
Output and Input Metering	RF output
Power requirements	230V AC 50/60Hz
Dimensions	270w x 300d x 120h mm
Weight	10kg (22lbs)



Gemini 6 internal view

Gemini 6 rear view showing RCA jack for PTT and N connectors for RF.

The GEMINI amplifiers are advertised as plug and play units. They incorporate a complete 50V linear power supply; no external PSU is required. The units carry a two year warranty. Linear Amp says that orders now being taken for delivery December 2013/January 2014. Price of the unit as of October 3rd is £849.00 including VAT.

Linear Amp also intends to produce versions for 432MHz and 1296 MHz. These units will become available during 2014. More information can be found at: *http://www.linearamp.co.uk/.*

Tokyo HY-Power rereleases the HT-750

If you recall, recently Tokyo Hy-Power recently released preliminary information on a new multi band HT, similar to the legendary HT-750 tri-band HT. On 16th September I received the following email from Nobuki, head of Tokyo Hy-Power:

"Chris,

I hope you have been well. Today I have some interesting news about our QRP product that had been very popular 1996 ~ 2002.

We have some limited quantity of stock now for HT-750, 3 Band HF (40/15/6metre) SSB/CW 3 watt transceiver. They are refurbished products and fully brushed up, looking brand new in good condition. We have accompanying high gain collapsible antennas (for 40, 15, and 6 metres) as well as soft case.

I wonder if you have club members who might be interested in this unique radio. I can offer you a special kit price of US $499.00 (plus shipping)… including all antennas, and soft case.

Looking forward to hearing from you soon, 73,
Nobuki Wakabayashi, JA1DJW"

Those of you who are familiar with the HT-750 know this is a real bargain. For those of you who aren't, a brief stroll around the internet will acquaint you with the qualities of the unit. There are a couple You Tube videos that show how sensitive its receiver is.

Noble Radio NR-6N4 Two Band VHF Transceiver

Noble Radio, a new amateur radio equipment manufacturer, has announced its first venture into the ham market – the NR-6N4 dual band six and four metre multimode transceiver. The radio appears to be a repackaged commercial unit, and no firm introduction date has been announced.

Preliminary Technical Specifications, which are subject to change, are:

1. RECEIVER SPECIFICATIONS
Frequency Coverage:
4M: 69.9MHz to 70.5MHz
6M: 50.0MHz to 52.0MHz
Modes: SSB (USB /LSB) and CW (No FM)
Circuit Type: Down converting design.
Dual Conversion: 1st IF: 10.7MHz 2nd IF: 25KHz
Sideband elimination using phasing techniques with digitally generated Quadrature carriers and Image Reject Mixers preceded by 15kHz crystal roofing filters.
Ultimate receiver bandwidth set by adjustable SCAF filters. Two 8th order filters used; one for High Cut and one for Low Cut.
Sensitivity:
MDS = -130dbm
Dynamic Range Figures:
Blocking: 110db
IMD (3rd Order) = 95db
Selectivity:
500Hz to 4 KHz adjustable with the SCAF filters.
Ultimate attenuation of filters is 55db or better.

2. TRANSMITTER SPECIFICATIONS
Frequency Coverage:
4M: 69.9MHz to 70.5MHz
6M: 50.0MHz to 52.0MHz
Modes: SSB (USB & LSB) and CW
Output Power: 20 watts CW or PEP SSB
SCAF Filters can be used to tailor SSB Transmit audio.

3. GENERAL SPECIFICATIONS
Synthesizer: DDS/PLL synthesizer with 10Hz minimum step size. Tuning rate is variable depending on the Tuning Knob speed (Variable Speed Tuning - VST)
Memories: 10 memories per band
Antenna Impedance: 50 ohms unbalanced
Supply Voltage: 11.5 to 14 Volts Regulated DC (negative ground) at approximately 3.6 amps at full output power.
Dimensions: 8 in (203 mm) W x 12 in (305 mm) D- including knob and heat sink x 3.75 in (95 mm) H - including feet
Weight: Approximately 4 lbs. (1.8 kg)

4. SPECIAL FEATURES
The NR-6N4 has the capability of being controlled by a standard PC type keyboard that plugs into a rear connector. Once a keyboard is interfaced to the radio, it can be used to directly enter a frequency, skip directly to various functions by a single press of a function key without having to navigate the menus from the front panel buttons as well as being used to send CW via the keyboard. There is also a built in keyer function that operates with a standard keyer paddle for CW operation with or without a keyboard connection.

The low level 10.7MHz IF signal is also brought out to a rear connector so that it may be used for panadapter or SDR applications. The price is expected to be around $800. More information can be found at *www.nobleradio.eu*.

Noble Radio NR-6N4 transceiver

73, Chris, W3CMP

ARRL ONLINE COMMUNICATIONS COURSE CATALOG

By James L. Ibaugh, AA3C, ARRL T.S.

ARRL's New Online Learning on the Moodle Platform System are now available! Moodle is an acronym for Modular Object Oriented Dynamic Learning Environment. It is an open source online learning management platform.

<> Introduction to the ARRL's Moodle Online Learning Platform A FREE PDF download.

[AA3C note: "Intro...to...Moodle...Platform" tutorial is a must read and keep for reference while operating on Moodle Platform! There are some additional instructions that will explain features of the Moodle platform only available to Mentors (instructors).]

<> ARRL is now accepting enrollments for the first new course developed for the Moodle online learning platform. Click the next hyperlink for our newest reconstructed ARRL's Online Course Catalog for the description of Introduction to Emergency Communication and a link to enroll. You'll find information about prerequisites, course fee, course length, course requirements, equipment or resources you'll need, as well as a course syllabus and examples of course activities.

<> Prerequisites. Before you begin the EC-001 course you should have completed the following prerequisites. These courses provide a foundation for the content of this course.

These are FREE mini-courses you can take online at The FEMA GOV TRAINING SITE

What is a FEMA SID? A FEMA Student IDentification (SID) number is a unique number generated and assigned to anyone who needs or is required to take training [ARRL prerequisites] provided by a FEMA gov. organization. Your FEMA SID uniquely identifies you throughout the FEMA organization and all of its agencies. The goal is for your FEMA SID to serve as your personal identification number instead of your Social Security Number (SSN) in support of FEMA's effort to decrease/cease the use of SSN for identifying and tracking individuals. ARRL requires 2 "training.fema.gov" courses completed as prerequisites before enrollment in EC-001 . Moodle Platform is not needed for ARRL's FREE ICS-100 (IS-100.b) and IS -700.

<•> ICS-100 (IS-100.b) (Introduction to the Incident Command System) FREE!

<•> IS -700 (National Incident Management System) FREE!

[AA3C note: These are short courses that will let you get accustomed to online course use`.

There may be other FREE courses you may want to take beyond the ARRL's prerequisites.]

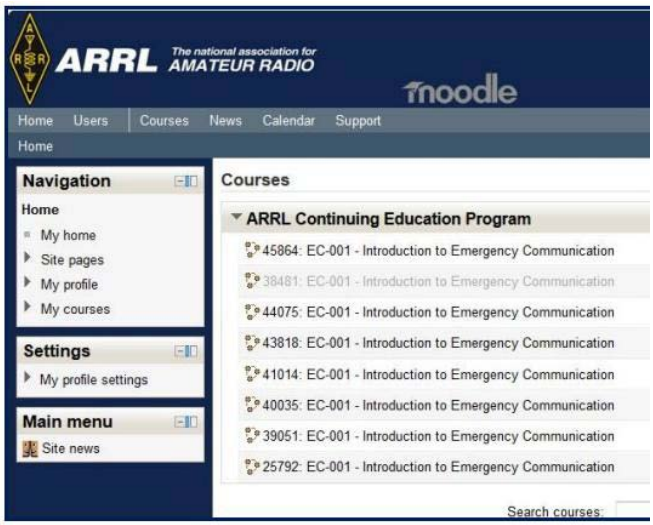
Certificate of Completion
ARRL, the national association for Amateur Radio recognizes that
Sharon Ibaugh, N3CXY
has met all of the requirements to successfully complete
EC-001 - Introduction to Emergency Communication
2004-07-17
Date
Awarded by David Sumner, K1ZZ
ARRL Chief Executive Officer
ARRL The national association for AMATEUR RADIO

Certificate of Completion
ARRL, the national association for Amateur Radio recognizes that
James Ibaugh, AA3C
has met all of the requirements to successfully complete
EC-001 - Introduction to Emergency Communication
2004-07-17
Date
Awarded by David Sumner, K1ZZ
ARRL Chief Executive Officer
ARRL The national association for AMATEUR RADIO

N3CXY finished the course before I did but all course data was released to data base on the 17th, July 2004 and we both finished courses in early June, 2004.

ARRL's MOODLE INTRODUCTION - PDF

On the Moodle platform you will see a page with a list of open course sessions. This will be your Moodle "Home" page. You will click on the course session you want to enter. This work can be done on your time schedule, any day of the week. You will be assigned a Course Mentor who will monitor/review your work, regardless of when you submit the work. The PDF also contains Mentor and Instructor info.



The Moodle online platform is configured for any standard-supporting browser with current updates.

- **<•> Firefox 3 or later.**
- **<•> Safari 3 or later.**
- **<•> Google Chrome 4 or later.**
- **<•> Opera 9 or later.**
- **<•> MS Internet Explorer 7 or later.**

Moodle.ORG strongly suggest Firefox browser on both PC or MAC.

Enable Pop-ups. You'll need to enable pop-ups from the course coming from moodle.ctdlc.org for the course content to display properly and for the various features of the platform to work as intended.

If you don't already have it, you'll need to download Adobe Flash. Instructions are provided for these last items when you sign into the course.

[AA3C note: I was told that the Moodle System will work on a computers running Windows XP, Vista, 7 & 8 platforms. I was using Windows 98SE-SP2 when I took the course back in 2004.]

ARRL's Online Course FAQ LINKs

If you have a question about the online courses, visit the online course FAQ page via the title line hyperlink.

EC-001 Online Course Overview

Course Syllabus

Section 1: The Framework: How You Fit In
Section 2: The Networks for Messages
Section 3: Message Handling
Section 4: What Happens When Called
Section 5: Considerations
Section 6: Alternatives and Opportunities

Final Assessment & Student Activities
<> Introduction to Emergency Communication
Course #: EC-001
This is a revision of our former Emergency Communications Basic/Level 1 course.
Cost: ARRL Members $50 ($35 discount!)
Non-Members/ Guests: $85
<> Description. This course is designed to provide basic knowledge and tools for any emergency communications volunteer. The course has 6 sections with 29 lesson topics. It includes required student activities and a 35-question final assessment. Course and assessment is expected to take approximately 45 hours to complete over a 9-week period (~5 hours per week). You will have access to the course platform at any time of day during this 9-week period so you may work according to your own schedule. You must pace yourself to be sure you complete all the required course material in the allotted time.

<> AA3C's Conclusion: You are allowed to complete the course EC-001 in less time. N3CXY completed hers in 4 weeks and I completed mine in 5 weeks. She can type ten times faster than I. Both Shari (N3CXY=XYL) and I took and passed the online-course EC-001. It was not very difficult at all. Shari asked, "Is that all there is to it?" I said straight out to her without hesitation or fear,

73's de AA3C – Jim
AA3C@ARRL.NET
AA3C@AMSAT.ORG

"Yes *BRIGADEAR*, you aced it!"

ARES/RACES

As part of the SPARC commitment to emergency communications, the SPARC repeater system is maintained as available for linking with other area repeaters.

Lancaster County RACES VHF Net is held on the first Tuesday of the month at 2030 hours local time on the 145.310 MHz repeater in Rawlinsville.

The Lancaster County primary ARES/RACES repeater is on 145.310 MHz with minus offset and 118.8 PL.

Combined York County Amateur and ARES/RACES NET convenes at 8:30 PM (2030) Mondays on 146.97.

Pennsylvania RACES HF Nets are held at 3993.5 kHz LSB on all Sundays except holidays.
The statewide net is on the first Sunday of the month at 0800 hours local time.
The Central Area (including Lancaster County) net is at 08:30 local time.

EPA NBEMS Net, Tuesday, 7:30pm local EST,
3.5920mhz Mode: Olivia 8/500 1khz,
Net Mgr: WA3WSJ@arrl.net

SPARC Nets

SPARC holds nets every Tuesday at 2100 local time on 145.230 MHz minus offset and a PL of 118.8. The 449.975MHz repeater is linked to the 2m repeater for the net.

Club Officers
President Harry Bauder – WA3FFK
Vice-President Kevin Lampo – K3LLC
Secretary - Dave Sarraf. – N3NDJ
Treasurer - Mike Hess– KB3YWG
Repeater Trustee - Dave Payne - N3LOM

Nearby Nets of Local Interest

If you need additional information on access tones etc. see http://arcc-inc.org/arc-fdbas.html Usually, the referenced web sites below will provide all the information needed.

Monday Ephrata Area Repeater Society Net
9:00 PM on 145.450MHz.

Tuesday Digital Net
8:00 PM on the York 146.97 Repeater -- This is a busy digital data training net for beginners and advanced users. The primary mode used is MT63-2k. Other experimental modes are also used. See http://www.w3hzu.com/

Wednesday Red Rose Repeater Association Net
9:00 PM on 147.015MHz

Thursday Lancaster Radio Transmitting Society Net
9:00 PM on 145.390MHz

Sunday Info Net
On the N3TUQ 900MHz repeater: 8:30PM Output: 927.5875MHz Input: 902.5875MHz (-25MHz) PL 114.8Hz.

The N3TUQ 900MHz repeater is located on the LVSRA tower on Cornwall Mountain.

Net control: Bob Howard, KB3QAQ

For more information visit
http://www.n3tuq.com/repeater.aspx

PACKRAT MONDAY NIGHT NETS
Visit the Mt Airy VHF Radio Club at:
http://packratvhf.com/airtimes.htm for the latest information on VHF/UHF nets.

Two EPA Nets Now Accessible via Echolink
Posted By: egroups_n3sw egroups_n3sw
Mon Aug 27, 2012 11:40 pm
<>The EPA AA3RG and Echolink Traffic Net (EAETN) has been accessible since its inception via Echolink at node AA3RG-R (#149493). See the group Calendar for more information. [*Thursday 8:00PM*]
<>Now the Capital Area Traffic Net (CATN) is also accessible via Echolink at node N3TWT-R (#743026). See the group Calendar for more information. All (*licensed hams*) are welcome to join in on these nets.
73 -Scott N3SW EPA STM-

<>AA3C note: To visit our group on the web, go to NTS-EPA Group web site:
http://groups.yahoo.com/group/nts-epa/
Both nets will utilize the 146.640(tx-) MHz.
Transmit access tone: 82.5 Hz.
AA3RG Repeater. **http://www.aa3rg.org/**

QRZ News Publication

QRZ News is published monthly. The deadline for submission of items for publication is 10 days before the regular membership meeting on the fourth Tuesday of each month. If a large amount of editing is required, earlier submission is required.

We operate on an exchange basis with other non-commercial publications. Articles printed in QRZ News may be reprinted in a not for profit publication provided proper credit is given

QRZ News is archived at http://www.k3ir.org/

1296 Net Report from W3ZKU

Ross Kaufman, W3ZKU, is now calling in to the Packrats 1296MHz net at 9:30 Monday evenings. Here is Ross' report on how he does it.

"Hi George:
I added the UX-910 option to the Icom 910H for 1296 and have a Comet 16 element Yagi which fits nicely on my 10 X 10 ft terrace. I could vaguely hear you on Monday on 1296 but we can probably hear you fine when your antenna is to the east. If you can hear the beacon in center city Philadelphia you will most likely copy me. I'm only a couple of blocks from that beacon.

73
Ross"

The UX-910 module puts out about 10w. I am running about 250w on 1296. I could not hear any trace of Ross with my antenna stuck pointing south.

When I get my 1296 rotor replaced, I will be able to copy the Packrat beacon on 1296.244MHz and Ross.

George, W3FEY

Six Meter EME Report From W7GJ

Hi George,

Those of us who are capable of working JT65A mode enjoy the Magic of working new DXCC on 6m EME all through the year! Last month the new one I worked was SV5EME. This month, I have skeds with T88, A92, VU, Z81 and 3D2/R! You can't work DX on 6m if you don't try! I am especially excited about the Rotuma station because they are VERY well equipped (1000w and a 6M8GJ yagi aiming right out over the ocean during their moonrise) and will be working many single yagi stations. GL and VY 73, Lance

--
Lance Collister, W7GJ
(ex WA3GPL, WA1JXN, WA1JXN/C6A, ZF2OC/ZF8, E51SIX, 3D2LR, 5W0GJ, E6M, TX5K) P.O. Box 73
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URL: http://www.bigskyspaces.com/w7gj
Windows Messenger: W7GJ@hotmail.com
Skype: lanceW7GJ
2m DXCC #11/6m DXCC #815

Interested in 6m EME? Ask me about subscribing to the Magic Band EME email group, or just fill in the request box at the bottom of my web page (above)!

Product Review: The Rig Expert Model AA-600 Antenna Analyzer

The Rig Expert antenna analyzer Model AA - 600 covers 100 KHz to 600 MHz. It operates on batteries stand-alone and is highly portable in its own carrying case with strap. I have used it in restaurants with other hams at the table to check the SWR of portable 2 m HT antennas. The antenna owner may not have been pleased with the result but he got a true one, HI!! This was also true when the same antenna was checked outside in rather free space.
Oh, the caveat….I am not an employee nor boss nor stockholder of the maker located in the Ukraine; I am just a pleased user. FYI, there is also a Model 1000 that covers to 1000 Mhz. and some others.

The unit can also feed your PC via a USB port and with the included cable, software on a CD, and batteries it is ready to go. Its' window to the world is an N fitting so in a sack, that also fits in the case with the unit reversed, I carry "N to__" adapters for BNC, 259, and SMA fittings.

For station use, the unit and PC give a much larger on –screen visual with the data at each frequency viewable by pushing a mouse button. In a typical scenario, I have swept HF dipoles, VHF and UHF beams over the band range, e,g. 4 MHz, at 2 meters, perhaps 10mor 20 Mhz or even the full 600 MHz which is the maximum sweep. The result is a graphical sweep made in a few seconds that displays the SWR curve over the swept range in values to 10 to 1. Another scale gives the SWR- only to 100 to 1 and in hundredths, e.g. 1.35 to 1. My 432 Mhz Yagi showed 18 to 1…..it will be repaired before the January 2014 contest!! The PC images can be saved in the program for later use. There is another scale that gives the following values: R, X, Z, L, C and RL among others.

The unit is readily available in the USA; I got mine at HRO, VA. The delivered price was $810 which may well compete with planned equipment purchases at many QTHs. I leave the reader full dominion over these factors and related decisions, HI!! The included rechargeable AAAs have good battery life, but I carry an extra set so a test is never aborted. The validity of the builders QTH is partly attested to by the mostly Cyrillic text on the AAA batteries!!

There is a Time Domain Reflectometer function that will tell you of coax issues to within inches if the correct velocity factor was put in the set-up. This is per a good friend who has used this function more than I have. The User's Manual seems a bit better than the often really crummy UMs that come with much ham equipment. I found myself soon into measuring antennas in a very intuitive way and running repeated tests as it is so easy to do so.

Summary: I like my unit and have made many tests with it. After calibration, I have felt confident that the reported results are correct. I have learned that some antennas, both HB and commercial, do not work as well as advertised. Now, if it would only check my antennas through 24 GHz, HI!!.....73, John, W3HMS

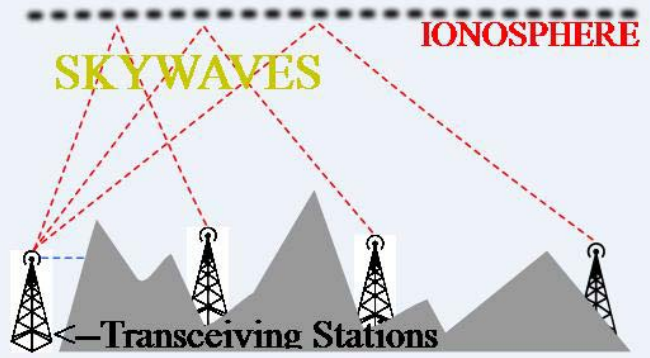
Reprinted from the October 2013 issue of Cheese Bits published by the Packrats. The Cheese Bit archives can be found at http://packratvhf.com/Cheese%20Bits/cheesebits.html

Near Vertical Incidence Skywave (NVIS)

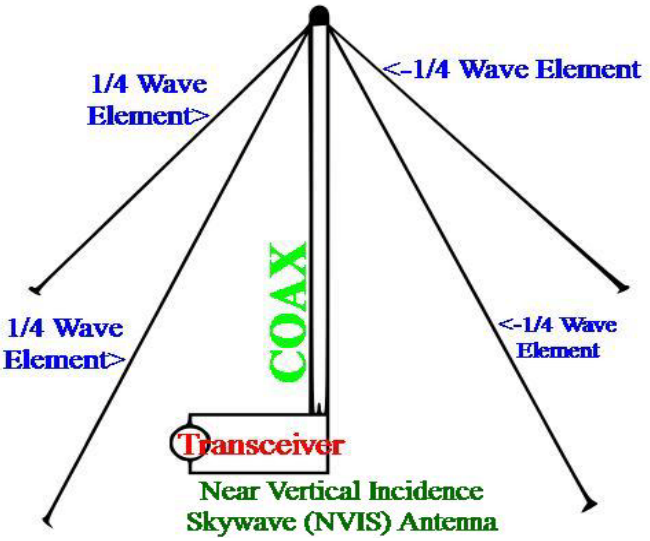
By James L. Ibaugh, AA3C, ARRL T.S.
Wikipedia Information quote:
wiki/Near_Vertical_Incidence_Skywave

"Near Vertical Incidence Skywave, or NVIS, is a radio-wave propagation method that provides usable signals in the range between ground wave and sky wave distances (usually 30 to 400 miles, or 50 to 650 km). It

is used for military and paramilitary communications, broad-casting, especially in the tropics, and by Radio Amateurs. The radio waves travel upwards into the ionosphere, where they are refracted back down and can be received within a circular region up to 650 km [400mi (or more)] from the radio transceiver. If the frequency is too high, refraction fails to occur and if it is too low absorption reduces the signal strength."



Special Antenna Designed for NVIS Service

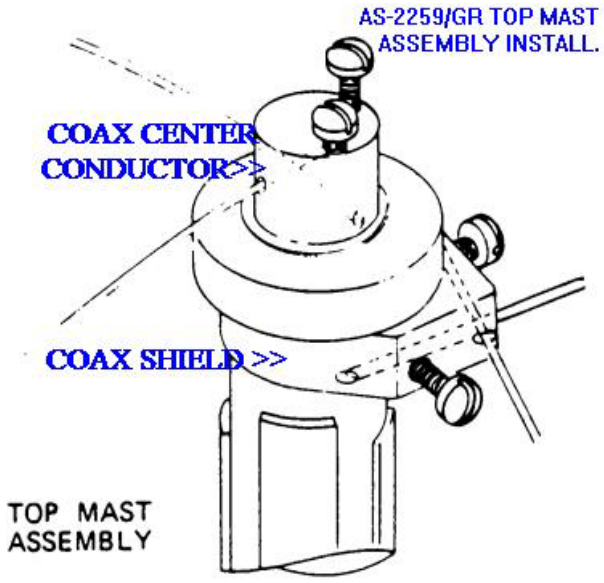


A military NVIS antenna is the US/AS-2259/G Antenna, which consists of two V-shaped dipoles: the four dipole wires (quarter wave each) also serve as guy support for the antenna mast/coax. The quarter wave elements are not grounded, they are insulated from ground yet fastened by insulating devices.

Band;MHz	QuaterWave in FT
1.9MHz	123.16ft
3.6MHz	65.00ft
3.8MHz	61.579ft
7.1MHz	32.958ft
7.2MHz	32.500ft
10.1MHz	23.168ft
14.1MHz	16.596ft
14.3MHz	16.364ft

Reliable frequencies for NVIS communications are between 1.8 MHz and 8 MHz. Above 8 MHz, the probability of success begins to decrease, dropping to near zero at 30 MHz.

There is still a chance to work daytime Skywave at 10MHz and 14MHz ham bands. All four quarter wave elements must be at a selected slope from the support mast/coax. The mast may be separate from the coax which maybe fastened to the mast with electricians plastic tape (ok for temporary field duty).
An antenna tuner may be used to lower the residual SWR. The radio end of the coax should have a grounding rod driven in to the ground at least to 6 feet at the bottom of the mast. The coax shield must be connected to the ground rod at the bottom of the mast.



Double Dipole Connections

FREE NVIS Antenna Manual Download

I built an Inverted "V" dipole for the 80 meter band when I lived on the farm (~53

years ago) and had space for any sized antenna. I even mounted a 40 meter set of elements at a 90º azimuthal off-set from the 80 meter elements.

At that age I didn't know what a sky wave was, nor did I know about SWR. I still made quite a number contacts 50 to 450 mile range with respectable signal reports (~ 459 to ~ 599 ; readability, strength and tone, on ~50watt CW).

My dual band inverted "V" was strung between two large trees and the RG59 coax (suggested to me by Russ, W3MFW, now SK) was about 120 feet long to reach my bedroom ham radio station. I also had two 150 ft long wires with an antenna tuner I built from ARRL Handbook design. I was using a Knight T-50, running ~50 watts from an RCA-807 final.

I have no idea what my SWR was, nor what my ERP was, I had no equipment to test it all. I really did not know that I was using a crude early version NVIS type antenna in 1958.

From US Government manual (public domain and unclassified military information).

Radio Communication Optimized Range as a Function of Antenna Element Angle

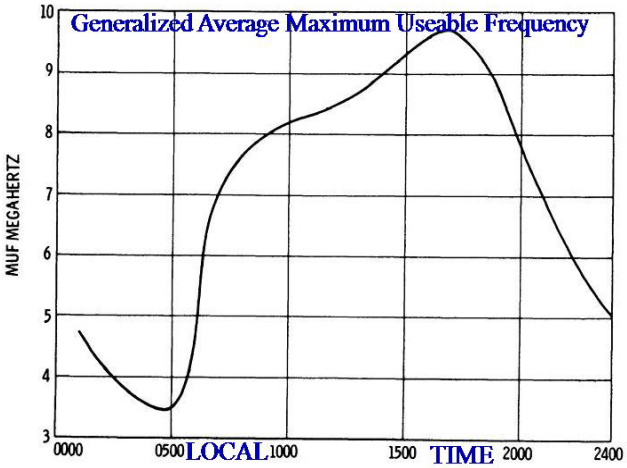
The following table summarizes the antenna take-off angles needed when the F2 layer is 250 miles up (vertical at transceiver site).

Range Distance	Take-off Angle º
10.0mi	90.00º
25.0mi	87.14º
50.0mi	84.29º
75.0mi	81.47º
100.0mi	78.69º
125.0mi	75.96º
150.0mi	73.30º
175.0mi	70.71º
200.0mi	68.20º
225.0mi	65.77º
250.0mi	63.43º
300.0mi	58.67º
350.0mi	53.90º
400.0mi	49.13º
450.0mi	44.36º

Angles below 45º have degraded signal levels (merges with the ground wave).

Quote from George Gadbois-W3FEY:

"NVIS has become important for HF communications. VHF fills in the gaps, but not everyone is able to put up the antennas to make VHF reliable out to 600 miles plus. The antenna footprint works out better at HF. The smaller antenna footprint is a big advantage for portable operations."



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Maximum Usable Frequency-Solar Influence

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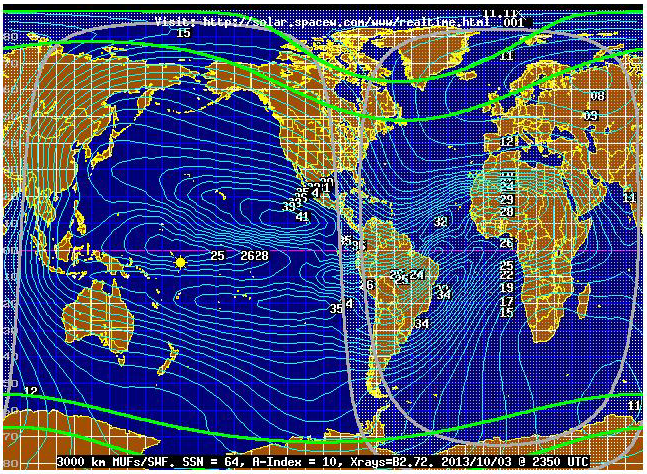


Use Windows ZOOM control [CTRL+] or [CTRL-] or [CTRL0] to adjust image size.

Click Here or on map for UPDATE Near Real Time

Selecting the Correct Frequency

Besides having low antenna height, the next most important factor is selection of the proper operating frequency. We need to select a frequency that is reflected by the F2-layer, but is not absorbed or significantly degraded by the D-layer. The higher the frequency, the less the D-layer will affect the signal. However, too high a frequency, and the signal will pass through the F2-layer into outer space.

Fortunately, we can determine the best operating frequency from propagation information on the Internet and a few relatively easy calculations. A good place to find the F2 Critical Frequency is at this URL:

http://www.spacew.com/www/fof2.html

The map at that URL shows the F2 Critical Frequency, fo for the entire world. It is updated every five minutes so the map is very current.

Another good URL for links to many propagation information sites is this URL:

http://solar.spacew.com/

Once we know the Critical Frequency, we can determine the proper operating frequency. The theory behind the selection is straight-forward. We need to select the frequency that is the highest possible without passing through the F2-layer. There are three factors to consider.

<1> First, the Critical Frequency for the F2-layer is foF2 or just fo. This is the highest frequency that will be reflected back to earth from the F2-layer when hitting the F2-layer at a perpendicular angle (the angle of incidence is 90°). Use a higher frequency and the signal will pass thorough the F2-layer into space and is lost for communications.

<2> MUF, or Maximum Useable Frequency, the highest frequency we can use and still achieve good reflection/refraction off the F2-layer.

The formula for MUF is:

$$MUF = f_o/\sin(\alpha)$$

where f_o is the Critical Frequency and α is the Angle Of Incidence (AOI). The MUF therefore is a function of the Critical Frequency and the angle at which the signal hits the F2-layer. Note that the frequency can be increased as the AOI is lowered. In NVIS operations, we want the signal to "hit" the F2-layer at nearly a 90° angle. The sine of 90° is 1. In fact the sine does not fall below 0.95 until the incident angle is below 72°. Since nearly all the useful radiation falls within the 90° + or – 20°, for an NVIS antenna, the MUF is essentially very close to the Critical Frequency.

<3> The third factor is FOT, Frequency of Optimum Traffic. The FOT is the frequency where nearly ~100% communication is achievable. The formula for FOT is:

FOT = MUF (.85) = ? MHz

Or for an NVIS antenna the formula is:

FOT = fo (.85) = ? MHz

Where Critical Frequency for the F2-layer is 'foF2' or just 'fo'; C.F. URL is in column left.

Amateur Radio Operators (ARO's), are limited to ham bands for operation. Band selection becomes choosing the 160, 80, 60, 40 or 30 meter bands (MUF dependent) for our home, portable or mobile (land, sea or air) communications.

<><> Here are a few URLs relevant and germane to the subject of this article.

-...-.- VA3RJ_Propagation Links -...-.-

Near-Real-Time F2-Layer Critical Frequency Map

Near-Real-Time Map of the F2-Layer Height Maximum

Near-Real-Time MUF Map

<><> My NVIS Research & Study Sources<>

_Relation of Radio Sky-Wave Transmission

to Ionosphere Measurements.

Dual orthogonal N V I Skywave Antenna.

Evolution of NVIS communications and the Battle of Arnhem, WWII.

Near vertical incidence skywaves in World War II, an historical perspective.

HF Communications: A Systems Approach (Maslin)

Amphibious antennas providing near vertical incidence skywave communication.

Dual polarization antenna (using NVIS system).

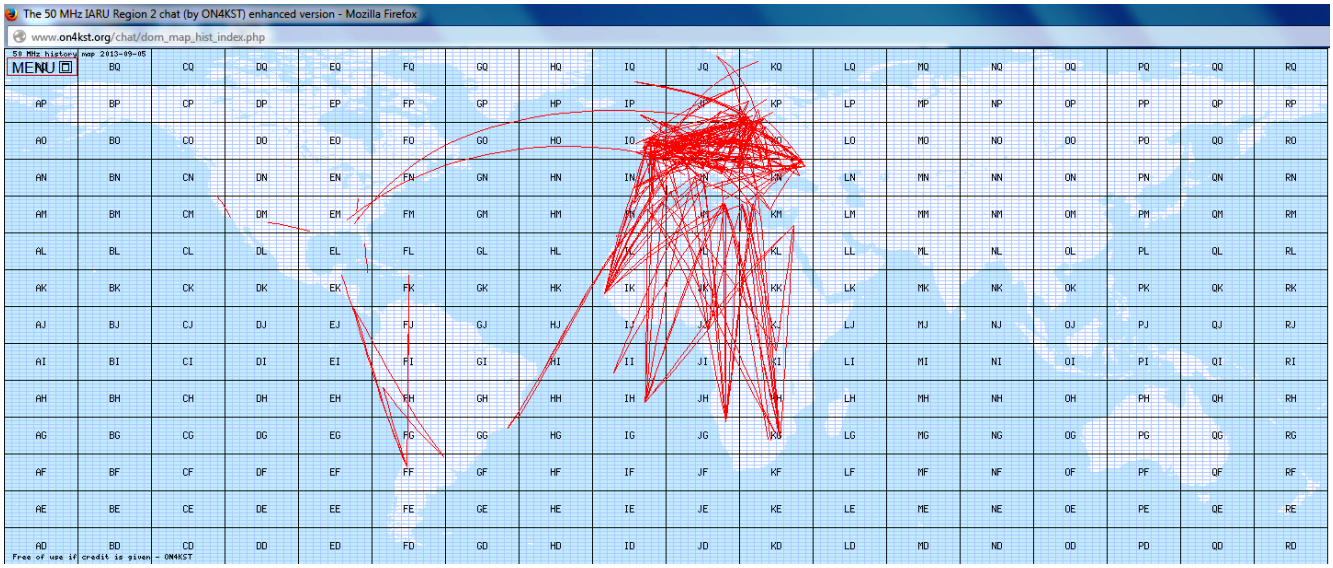
If you try an NVIS antenna please write it up in a short article or email and send to K3IR-SPARC's QRZ_News_Letter. Thank You!

73's de AA3C – Jim
AA3C@ARRL.NET
AA3C@AMSAT.ORG

Errata: The September 2 plot published last month was mislabeled. Here is the correct plot.

Full size ON4KST plots for September 2 & 5 2013. See the Six Meter DX report on page 6 of September QRZ news for details.

ON4KST propagation paths for 9-2-2013


The 50 MHz IARU Region 2 chat (by ON4KST) enhanced version - Mozilla Firefox
www.on4kst.org/chat/dom_map_hist_index.php
50 MHz history map 2013-09-05
MENU
Free of use if credit is given - ON4KST
ON4KST propagation paths for 9-5-2013